METHOD FOR TREATING POLYESTER FIBER FOR REINFORCING RUBBER

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Inventor: KITAHARA TAKESHI
Applicant: UNITIKA LTD
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Abstract of **JP2216281**

PURPOSE:To obtain the subject fiber improved in adhesion without requiring an increase in pickup of an adhesive or rise in heat-treating temperature by treating polyester fiber with a specific bonding solution and then heat-treating the resultant fiber. CONSTITUTION:(A) A precondensate of resorcin with formaldehyde is mixed with a rubber latex and aged. (B) A solution (with 20wt.% solid concentration and >=70cP viscosity at 20 deg.C) containing a condensate of 2,6-bis(2',4'-dihydoxyphenylmethyl)-4-chlorophenol with 2,6-dihydroxymethyl-4-chlorophenol and resorcin in aqueous ammonia and (C) a carboxylated vinylpyridine latex are added and mixed with the resultant aged solution to provide a bonding solution, which is used to treat polyester fiber and then carry out heat-treatment at 210-250 deg.C.

Partial Translation of JP2-216281A

[Claim 1]

A treating method of polyester fiber for rubber reinforcement, characterized by comprising steps of:

treating a polyester fiber with an adhesive liquid obtained by mixing an aging liquid(A), solution(B), and carboxylated vinylpyridine latex(C), and

thermal-treating at 210 to 250 °C, wherein

the aging liquid(A) is obtained by mixing rubber latex and an initial condensation product of resorcinol-formaldehyde, and by aging, and

the solution(B) is an ammonia aqueous solution of condensation product of 2,6-bis(2',4'-dihydroxyphenylmethyl)-4-chlorophenol, 2,6-dihydroxymethyl-4-chlorophenol and resorcinol,

and the viscosity of the solution(B) of solid content of 20 ± 0.5 weight % and of pH of 10 or more is 70 centi-poise or more at temperature of 20 ± 0.2 °C.

[Page 2, left-low column line 17 to right-low column line 10]

In this invention, condensed phenol compound solution(B) is mixed with RFL liquid. The solution (B) can be obtained by react 2,6-bis(2',4'-dihydroxyphenylmethyl)-4-chlorophenol, 2,6-dihydroxymethyl-4-chlorophenol and resorcinol in alkaline aqueous solution with appropriate molar ratio. The condensed phenol compound solution (B) used in this invention should have high viscosity of 70 cps or more when it is measured by the above-mentioned method. In other words, the solution (B) should be macromolecule that can form a strong adhesion film on the surface of fibers. As such condensed phenol compound with high viscosity, "DENABOND" (NAGASE CHEMICAL Co, Ltd., trade name) of high viscosity type can be preferably used.